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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,825

10/07/2005

Kei Terada

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EXAMINER

MCCLLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

12/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,825	<b>Applicant(s)</b> TERADA ET AL.	
	<b>Examiner</b> RENATA MCCLOUD	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16,17 is/are allowed.
- 6) ☒ Claim(s) 12-15 and 18-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12-15, 18-26 rejected under 35 U.S.C. 102(b) as being anticipated by Yutkowitz et al (US 5710498)**Claim 12:** position feedback correction unit (fig. 3b: 28) for outputting a corrected position feedback signal by adding a between-axes positional deviation, filtered and gained, that is the difference between a self-axis position and another-axis position, to a self-axis position to which a gain is applied (col. 6:12-65, 9:26-56); a position control unit (22) for performing, according to the corrected position feedback signal outputted from the position feedback correction unit, positional control to output a velocity command; and a velocity control unit (37) for outputting a feedback torque command based on the velocity command outputted from the position control unit, and on a self-axis velocity (col. 9:56-62). **Claim 13:** the position feedback correction unit, the gain applied to the between-axes positional deviation is set at a negative value during operational stops, and is set at a positive value during operational runs (col. 11:65-12:6).

**Claims 14, 15,:** a velocity feedback correction unit for outputting a corrected velocity feedback signal by adding a between- axes velocity deviation, filtered and gained, that is the difference between the self-axis velocity and another -axis velocity (col. 6:19-35), to a self-axis velocity to which gain is applied (col. 6:36-65); wherein the velocity control unit outputs the feedback torque command based on the velocity command outputted from the position control

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unit, and on the corrected velocity feedback signal outputted from the velocity feedback correction unit (col. 9:57-62).

**Claim 18:** reference model control unit (fig. 3b: 28) for calculating, based on a position command, a model position and a model acceleration for simulating an ideal movement for a machine; (col. 6:12-65, 9:26-56); a position feedback correction unit (23) for correcting a position feedback signal by adding a self-axis position filtered through a high-pass filter and an other-axis position filtered through a low-pass filter: a position control unit (22) for performing, according to a corrected position feedback signal outputted from the position feedback correction unit (23), positional control to output a velocity command; and a velocity control unit (37) for outputting a feedback torque command based on the velocity command outputted from the position control unit, and a self-axis velocity (col. 9:56-62); a model torque correction unit for correcting, according to the self-axis position and another-axis position, the model acceleration to calculate a model torque; and an accumulator for calculating a torque command based on the model torque and the feedback torque command (col. 9:63-12:11)

**Claim 19:** the reference model control unit is further for calculating, based on the position command, a model velocity for simulating the ideal movement for the machine (col. 6:12-65, 9:26-56; and the velocity control unit outputs the feedback torque command based on the velocity command outputted from the position control unit, on the model velocity, and on the self-axis velocity (col. 9:56-62)

**Claims 20,22:** in the model torque correction unit, in accordance with time or with a waveform of the velocity command, the correction unit's correction operation is started and stopped, or correction gains are changed (col. 10:23-11:25).

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**Claims 21,23:** the model torque correction unit calculates the model torque by correcting the model acceleration further based on the sign of the model acceleration (col.11:25-42, col. 12:41-59).

**Claim 24;** calculating torque by correcting the acceleration bases on the sign of the acceleration (col. 9:63-12:11).

**Claim 25:** reference model control unit (fig. 3b: 28) for calculating based on a position command, a model position and a model acceleration for simulating an ideal movement for a machine; (col. 6:12-65, 9:26-56); a position feedback correction unit (23) for outputting a corrected position feedback signal based on a self-axis position and another-axis position; a position control unit (22) for performing, according to a difference between the model position and the corrected position feedback signal outputted from the position feedback correction unit (21), positional control to output a velocity command; a velocity feedback correction unit for outputting a corrected velocity feedback signal based on a self-axis velocity and the other another axis-velocity; and a velocity control unit (37) for outputting a feedback torque command based on the velocity command outputted from the position control unit, and the corrected velocity feedback signal outputted from the velocity feedback correction unit; (col. 9:56-62); a model torque correction unit for correcting, according to another axis model acceleration to the self-axis position and the other-axis position, the model acceleration to calculate a model torque; and an accumulator for calculating a torque command based on the model torque and the feedback torque command (col. 9:63-12:11)

**Claim 26:** the reference model control unit (28) is further for calculating, based on the position command (fig. 3a: pos cmd), a model velocity(fig. 3b:vel cmd) for simulating an-the ideal movement for the machine for simulating an ideal movement for the machine; and the velocity control unit (37) outputs the feedback torque command based on the velocity command

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outputted from the position control unit, on-the model velocity, and on-the corrected velocity feedback signal outputted from the velocity feedback correction unit (abstract; col. 3:9-25;4:48-67; 5:60-6:11, 6:12-29, 36-43).

### ***Allowable Subject Matter***

3. Claims 16,17 allowed. The following is an examiner's statement of reasons for allowance: the prior art fails to teach or make obvious a position feedback correction unit for correcting a position feedback signal by adding a self-axis position filtered through a high-pass filter and an other-axis position filtered through a low-pass filter; a position control unit for performing, according to a corrected position feedback signal outputted from the position feedback correction unit, positional control to output a velocity command; and a velocity control unit for outputting a feedback torque command based on the velocity command outputted from the position control unit, and on the self-axis velocity.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

4. Applicant's arguments filed 6/19/08 have been fully considered but they are not persuasive. In response to applicant's argument that Yutkowitz et al do not teach the claimed position feedback correction unit in as complete detail as set forth in the claims, although Yutkowitz does not use the same claim terminology, Yutkowitz et al do teach a position correction unit (fig. 3b: 23) for outputting a corrected position signal by adding a between-axes

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positional deviation, filtered and gained, that is the difference between a self-axis position and another-axis position, to a gained self-axis position to which a gain is applied (col. 6:12-28,36-65; 9:26-56). In response to applicant's argument that Yutkowitz et al do not teach a model torque correction unit for correcting, according to the self-axis position and another-axis position, the model acceleration to calculate a model torque, Yutkowitz et al teach a unit for correcting acceleration in order to calculate force/torque (abstract; col. 3:9-25;4:48-67; 6:12-29, 36-43). In response to applicant's argument that limitations were not addressed, although Yutkowitz does not use the same claim terminology, the claim limitations were addressed.

In response to applicant's argument that there is no disclosure or suggestion in Yutkowitz of calculating, with respect to the subject controlled element, a difference between a self-axis position and another-axis position, Yutkowitz et al teach a position correction unit (fig. 3b: 23) for outputting a corrected position signal by adding a between-axes positional deviation (difference), that is filtered and gained, that is the difference between a self-axis position and another-axis position, to a gained self-axis position to which a gain is applied (col. 6:12-28,36-65; 9:26-56). This is with respect to the controlled element include movable machine members (abstract). In response to applicant's argument that Yutkowitz does not disclose the model torque correction unit for correcting, according to the self-axis position and another-axis position, the model acceleration to calculate a model torque, Yutkowitz et al teach a unit for correcting acceleration in order to calculate force/torque (abstract; col. 3:9-25;4:48-67; 6:12-29, 36-43).

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RENATA MCCLOUD whose telephone number is (571)272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Renata McCloud/  
Examiner, Art Unit 2837

/Walter Benson/  
Supervisory Patent Examiner, Art Unit 2837



<div>Application Number</div> <div></div>	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/552,825	TERADA ET AL.	
	Examiner	Art Unit	
	RENATA MCCLOUD	2837	